



ATRACT™

T-CELL ACTIVATION KIT

Strong T-Cell Activation and Expansion

The Atract™ Kit produces a fast and strong activation response from naïve T cells, promoting high proliferation and expansion of activated cells.

Pure and Clean Cells

No magnets, no impurities, and no residual antibodies.

Flexible and Scalable

The Atract™ Kit demonstrates robust functionality and scalability across different platforms to obtain the desired number of activated cells.

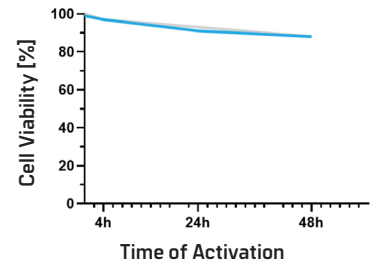
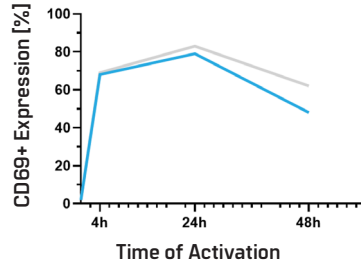
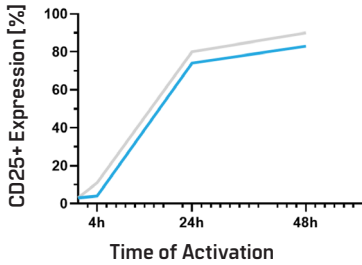
Simple and Quick

Fast, intuitive workflow, ideal for T-cell research and other industry applications.

What Makes Our T-Cell Activation Technology Stand Out?

Bio-ReCell's Atract™ Kit stands to deliver unprecedented results and a smooth operator experience to your experimental processes. Based on our patented technology, this reagent enables robust and reliable activation of T cells as a prerequisite for the development of state-of-the-art therapeutics and other innovative solutions.

The Atract™ Kit mimics the role of antigen-presenting cells in a native setting by stimulating naïve T cells via the CD3 subunit of the TCR receptor and invigorating the activation with costimulatory signals specific to T cells.



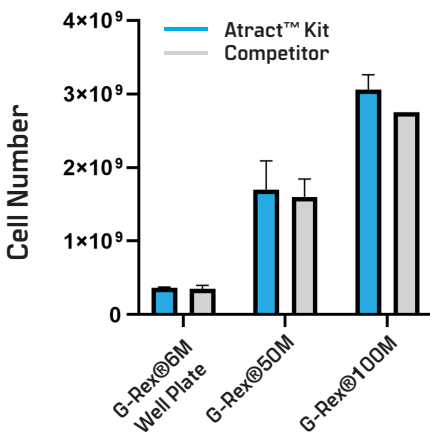
Comparison of T-cell activation with Atract™ Kit and a market-leading competitor by key parameters: (A) expression of CD25; (B) expression of CD69; (C) cell viability.

Activation Profile of T Cells During 48h.

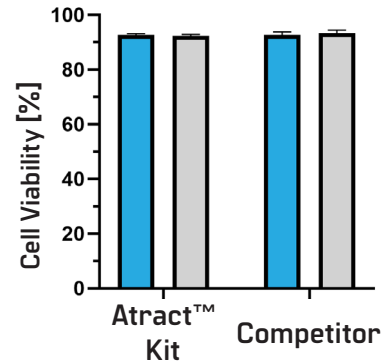
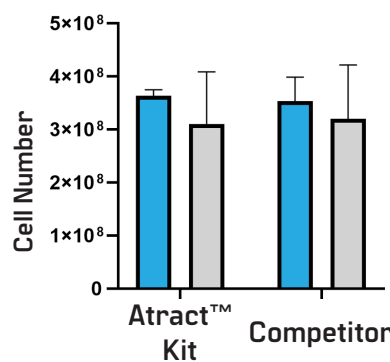
— Atract™ Kit
— Competitor

Nascent populations of bulk PBMCs undergo a major transformation upon exposure to the Atract™ Kit, resulting in phenotypically distinct cell populations and a dramatic increase in the number of cells. The expansion is driven by the rapid and persistent proliferation of activated T cells with a concurrent depletion of the innate immune-cell and B-cell populations.

The Atract™ Kit enables robust T-cell expansion across a range of culturing platforms. Its scalability has been demonstrated through successful experiments in various sizes of G-Rex® containers, supported by our participation in the ScaleReady G-Rex® Grant Program. T-cell activation with the Atract™ Kit yields high expansion rates and excellent cell viability, even when used with different activation media, highlighting the versatility and reliability of the technology.

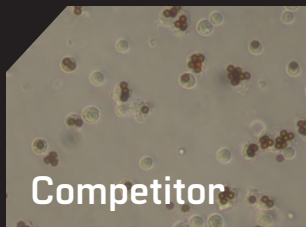


Comparison of the Scalability of T-Cell Expansion in different size G-Rex® platforms after activation with the Atract™ Kit and a market-leading competitor.

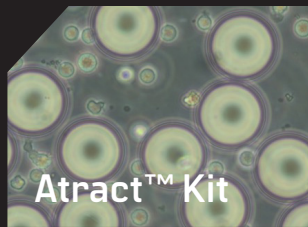


— CTS™ AIM-V™ (Gibco™) + FBS
— X-VIVO™ 15 (LONZA) + SR

Comparison of T-Cell Yield and Viability after activation using the Atract™ Kit and a market-leading competitor in different T-cell media.

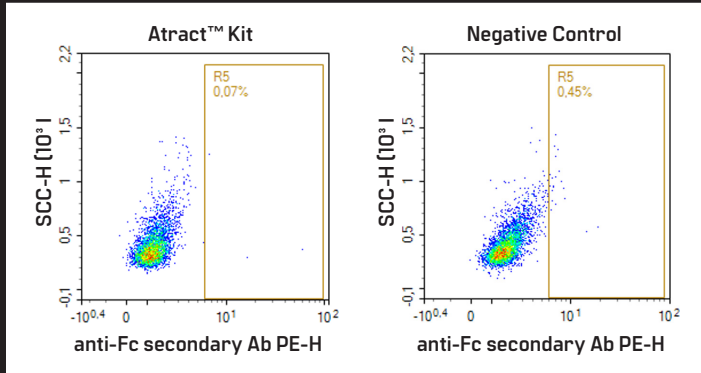


Competitor



Atract™ Kit

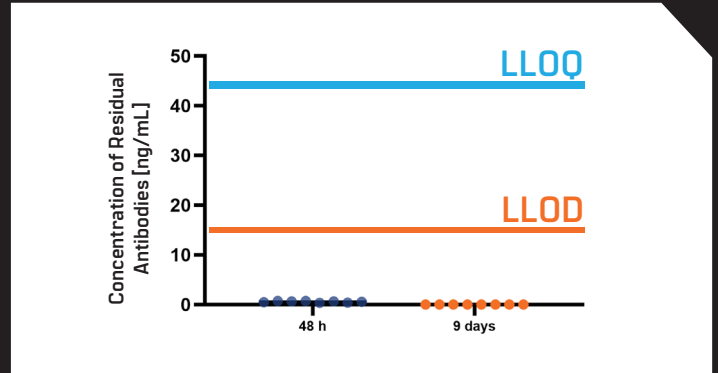
Different Activation Reagents Incubated with Isolated PBMCs. Phagocytosis of the competitor product can be observed in the microscopy image [left], while the Atract™ Kit cannot be phagocytised by the cells due to its physical properties [right].



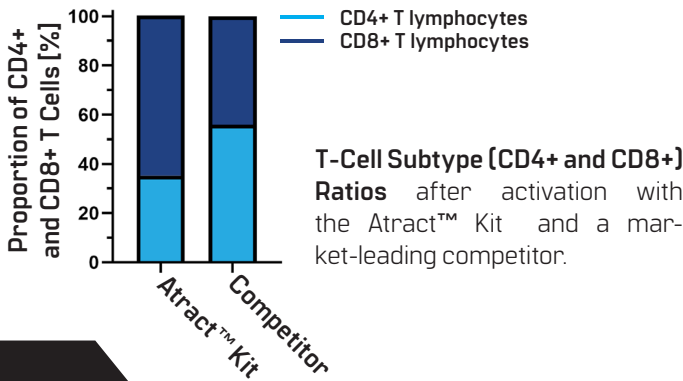
Staining with Secondary Antibodies to detect potential leftover antibodies on cells after 48h of incubation with the Atract™ Kit (left) or negative control (right).

By addressing the risk of contamination at its source, the Atract™ Kit was specifically designed to prevent phagocytosis of the reagent. This offers a critical advantage over competing products, which can be internalized by immune cells as part of their natural response to foreign materials.

A commercial anti-IgG ELISA test after 48h and 9 days of incubation with the Atract™ Kit has shown antibody concentrations in the media below the detection limit. A flow cytometry analysis of potential leftover antibodies on the cells showed comparable results between the Atract™ Kit sample and the negative control.



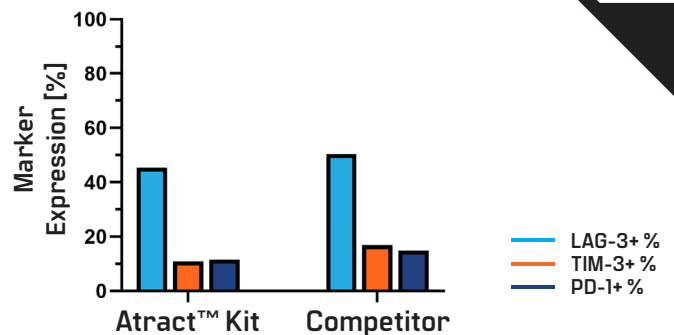
Cell Media Tested with Anti-IgG ELISA for Residual Antibodies after incubation with the Atract™ Kit. LLOD – lower limit of detection; LLOQ – lower limit of quantification.



T-Cell Subtype (CD4+ and CD8+) Ratios after activation with the Atract™ Kit and a market-leading competitor.

Activation of T cells triggers a transition from a naïve to an activated phenotype, which sets the cells onto several possible paths of differentiation. The two major subtypes are helper T cells [CD4+] and cytotoxic T cells [CD8+]. A mixed population of both is usually desired, as each possesses unique functions and roles, necessary for an effective immune response. The Atract™ Kit delivers a heterogeneous cell product with a higher proportion of CD8+ T cells, harboring the potential for better therapeutic outcomes*.

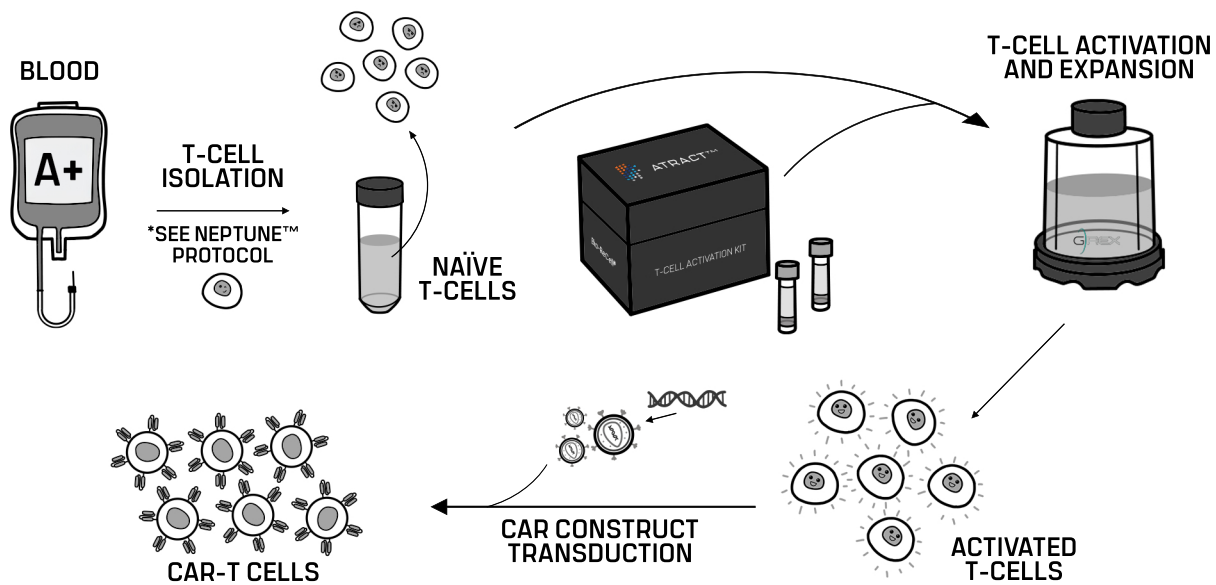
Sustained expression of markers such as PD-1, LAG-3, and TIM-3 can drive T cells into an exhausted state. The expression profile of these exhaustion markers serves as an indication of T-cell status and their therapeutic potential. Activation with the Atract™ Kit shows a similar exhaustion profile in a T cells after a 9-day expansion to other activation products, indicating a cell product that is well suited for further application in therapeutic research and T-cell studies.



Comparison of Exhaustion Marker Expression Levels on day 9 of expansion using the Atract™ Kit or a market-leading competitor.

* Galli E, Bellesi S, Pansini I, Di Cesare G, Iacovelli C, Malafronte R, et al. The CD4/CD8 ratio of infused CD19-CAR-T is a prognostic factor for efficacy and toxicity. Br J Haematol. 2023; 203(4): 564–570.

This product is for research use only.



Atract™ Kit in Practice

Summary

- Strong and durable activation of T-cells with over 80% CD25+ T cells after 48h.
- High proliferation and expansion, more than 3×10^8 cells after 9 days of expansion in G-Rex[®] 6M platform.
- Scalable across various culture platform sizes with consistent and robust activation in different activation media.
- A simple and quick protocol with no special equipment required.
- Biocompatible composites with covalently bound antibodies, resistant to phagocytosis, ensuring a pure and clean final cell product.

Follow us to keep track on the latest developments.



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